U.S. FISH & WILDLIFE SERVICE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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January 27, 1999

Mr. Dennis Gagne
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100
Boston, Massachusetts 02114-2023

Dear Mr. Gagne:

We have reviewed the draft Long-Term Monitoring Plan for Sites 1 and 3 and the Eastern Plume at the U.S. Naval Air Station in Brunswick, Maine. The following comments are provided in accordance with the provisions of the Fish and Wildlife Coordination Act and our interagency agreement for technical assistance.

The draft monitoring plan includes the biannual collection of nine surface water samples in Mere Brook and sediments from leachate seeps. Sediment sampling in Mere Brook, however, is not included in the plan. Highly persistent environmental contaminants associated with the landfill have been detected in fish from Mere Brook. Significantly higher levels of mercury, chlordane, dieldrin, and DDT were found in adult brook trout inhabiting the landfill segment of the brook than in trout collected from an upstream reach of Mere Brook west of the NASB runway (Figure 1). Based on the fish tissue residue data, we believe Mere Brook sediments should also be evaluated as part of the Sites 1 and 3 long-term monitoring plan. Periodic analysis of Mere Brook sediment samples would provide information to evaluate source control, possible reductions in contaminant concentrations from natural sedimentation or seasonal/high flow scouring, and contaminant transport to the estuarine areas of Harpswell Cove.

At the January 21, 1999 NASB Restoration Advisory Board meeting, the Navy agreed to consider a Mere Brook sediment component to the long-term monitoring plan. We offer the following technical recommendations regarding sediment sampling:

Frequency - The concentrations of contaminants in sediments are likely to change gradually over time. Consequently, a less frequent collection scheme than the biannual surface water plan could be adopted. The frequency of sediment collections could be annual or biennial to reduce collection and analytical costs.

Locations - Ideally, sediments should be collected from the same areas as surface water (i.e., 9 locations). The Mere Brook substrate beside the landfills, particularly in the main channel, is quite coarse and sandy. It may be quite difficult to locate nine depositional areas with fine-grained sediments and organic matter in Mere Brook. From a practical standpoint, there has to be some flexibility in the number of samples required. At a minimum, however, sediment samples should be collected in Mere Brook adjacent to the landfill and former (or active) seeps, downstream before the confluence with Merriconeag Stream, and from a reference area west of the NASB runway.

Depth - Part of the reason for sediment sampling is to determine if existing contamination in the Brook is being covered by normal sedimentation or transported by seasonal scouring. Therefore, shallow composite sediment samples (≈ 1 inch) are recommended to monitor the potential changes in contaminant concentrations in the surficial layer of Mere Brook sediments.

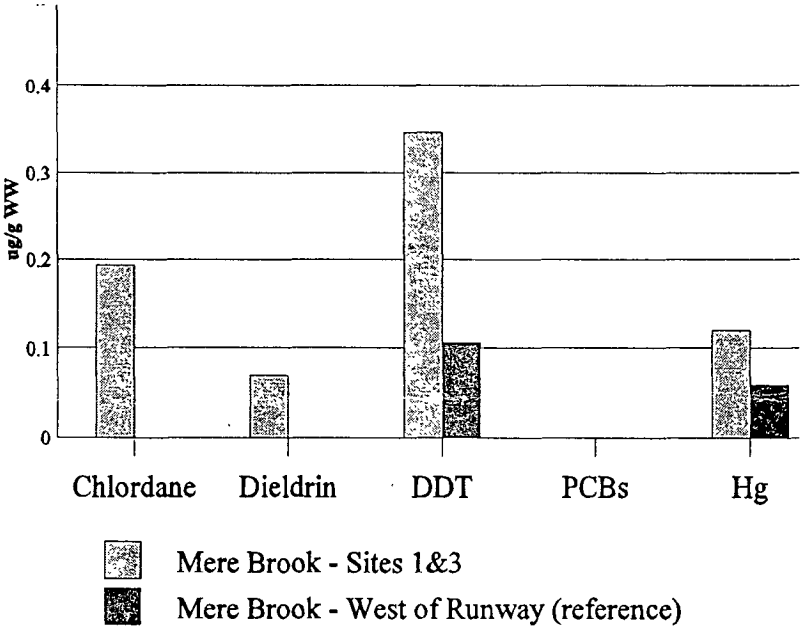
Analyses - Chemical analyses should include scans of trace elements and organochlorines. Organochlorines were not considered contaminants of concern in other media (e.g., groundwater, surface water, leachate sediment) in earlier sampling programs. The organochlorine pesticide levels detected in Mere Brook fish tissue in 1995 were clearly elevated and the inclusion of this contaminant group in the sediment analyses is warranted. Grain size and total organic carbon should also be measured to ensure that samples contain fine-grained sediments from depositional areas.

I hope you find these comments useful. If you have any questions, please call Steve Mierzykowski at (207) 827-5938

Sincerely,

Kenneth C. Carr
Acting Supervisor
New England Field Office

Figure 1. Organochlorines and mercury in adult brook trout from Mere Brook, NASB[1].



Missing bars indicate non-detects.
Between site comparisons for each contaminant are significantly different at α 0.05

[1] USFWS. 1997. *Environmental contaminants in fish from Mere Brook - U.S. Naval Air Station, Brunswick, Maine*. USFWS. New England Field Office. Spec. Proj. Rep. FY97-MEFO-3-EC. Old Town, Maine.

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